U.S. DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY-NIST
(formerly National Bureau of Standards-NBS)
OFFICE OF STANDARDS SERVICES

COMMERCIAL STANDARD CS126-56

TANK-MOUNTED AIR COMPRESSORS

Commercial Standard CS126-56, Tank-Mounted Air Compressors, was withdrawn by the U.S. Commerce Department on June 23, 1971.

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The following organizations can provide copies, further guidance and assistance for additional information on their standards and documents and/or other sources (example: ASME B19.1 Safety Standard for Air Compressor Systems and UL1450, UL Standard for Safety Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment, GAGI Rotary Air Compressor Selection Guide), contact:

American Society for Mechanical Engineers (ASME)
345 East 47th Street, New York, New York 10017, USA
Telephone: (800) 843-2763, (202) 705-7722
Fax: (212) 753-9568

Compressed Air and Gas Association (CAGA) and
Compressed Air and Gas Institute (CAGI)
c/o Thomas Associates, Inc.
1300 Sumner Avenue
Cleveland, Ohio 44115-2851, USA
Telephone: (216) 241-7333; Fax: (216) 241-0105

Underwriters Laboratories (UL)
333 Pfingsten Road
Northbrook, Illinois 60062, USA
Telephone: (847) 272-8800; Fax: (847) 272-8129

U.S. Department of Commerce
National Institute of Standards and Technology (NIST)
National Center for Standards and Certification Information (NCSCI)
Building 820, Room 164
Gaithersburg, Maryland 20899
Telephone: (301)975-4040; Fax: (301)926-1559

ACKNOWLEDGMENT OF INQUIRY

In response to your request, please see the box(es) checked below:

☐ The enclosed list of standards, which may be of interest to you, contains the acronym of the standards-developing organization, the standards designation number, and title. Copies and/or additional information can be obtained directly from the respective organizations (see enclosed booklet).

☐ Military (MIL) and Department of Defense (DOD) specifications, standards, handbooks and inquiries on select technical manuals, forms and documents can be obtained from Defense Automated Printing Service, 700 Robbins Avenue, Building 4, Section D, Philadelphia, PA 19111-5094, Telephone (215)697-2179 or 697-2667; Fax (215)697-2978. Federal (FED) specifications, standards and handbooks can be obtained from regional General Services Administration (GSA) Business Service Centers listed on the back of this form.

☐ Ref: Your request for Commercial Standard CS126-56.

Enclosed is additional information and copy of withdrawn CS126-56, Tank-Mounted Air Compressors. For assistance and additional information and copies, please contact the organizations referenced in the enclosed material.

The organizations listed on the enclosed 'Sources for Purchasing Standards' can also provide further assistance, information and copies of standards, etc. and/or other contact sources (i.e. UL, ASME and many others).

Our reference collection is open to the public Monday through Friday, 8:30 A.M. to 5:00 P.M. EST.

Information Specialist (signature)	Date

Commercial Standard CS126-56

SUPERSEDES CS126-45

Tank-Mounted Air Compressors

(Classification and Testing)

A RECORDED VOLUNTARY STANDARD OF THE TRADE

COMMODITY STANDARDS

Simplified Practice Recommendations and Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the Office of Technical Services, and with the National Bureau of Standards.

The purpose of Simplified Practice Recommendations is to eliminate avoidable waste through the establishment of standards of practice for stock sizes and varieties of specific commodities that currently are in general production and demand. The purpose of Commercial Standards is to establish standard methods of test, rating, certification, and labeling of commodities, and to provide uniform bases for fair competition.

The adoption and use of a Simplified Practice Recommendation or a Commercial Standard is voluntary. However, when reference to a Commercial Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforcible through usual legal channels as a part of the sales contract.

A Simplified Practice Recommendation or a Commercial Standard originates with the proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Commodity Standards Division the necessary data to be used as the basis for developing a standard of practice. The Division, by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedure of the Division assures continuous servicing of each effective Simplified Practice Recommendation and Commercial Standard, through review and revision, whenever, in the opinion of the industry, changing conditions warrant such action.

UNITED STATES DEPARTMENT OF COMMERCE

Sinclair Weeks, Secretary

U. S. DEPARTMENT OF COMMERCE

SINCLAIR WEEKS, Secretary

Prepared by

OFFICE OF TECHNICAL SERVICES

Commodity Standards Division

In cooperation with

NATIONAL BUREAU OF STANDARDS

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Washington 25, D. C. • Price 10 cents

Tank-Mounted Air Compressors

(Classification and Testing)

(Second Edition)

[Effective May 1, 1956]

1. PURPOSE

1.1. The purpose of this Commercial Standard is to provide uniform and simplified test methods, and to define size classifications for compressors, motors, and tanks, in order to provide a basis for fair competition for the guidance of manufacturers, distributors, and users.

2. SCOPE

2.1. This standard applies only to complete, stationary, tank-mounted, electric-motor-driven, automatic start-and-stop air compressors of ¼ to 15 horsepower, inclusive, operating above 100-lb/in.^{2} gage pressure and up to 200-lb/in.^{2} gage pressure, and of single- and two-stage air-cooled construction.[1]

3. DEFINITIONS

3.1. *Manufacturer.*—The manufacturer, for the purpose of this Commercial Standard, shall be the company or organization that evidences its responsibility by all of the following:

(a) Being a prime fabricator of tank-mounted air compressors.

(b) Affixing its name or its distributor's name and/or nationally registered trade-mark or trade name to the air compressor.

3.2. A *single-stage compressor* is one in which air is compressed in each cylinder, from initial intake pressure to final discharge pressure, on each working stroke of the piston.

3.3. A *two-stage compressor* is one in which air is compressed to final discharge pressure in two distinct steps.

3.4. *Piston displacement* of a compressor is the volume in cubic feet displaced by the piston or pistons in 1 minute. In a reciprocating single-acting compressor it equals the net area of the compressor piston or pistons multiplied by the length of the stroke and by the revolutions per minute. Piston displacement of a two-stage compressor is the piston displacement of the low-pressure cylinder or cylinders only.

3.5. *Capacity.*—The capacity of an air compressor is the actual volume of air compressed and delivered at a definite discharge pressure, expressed in cubic feet of free air per minute at ambient conditions.

[1] Simplified Practice Recommendation R202-48, issued by the U. S. Department of Commerce, and procurable from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., lists types, sizes, and nominal tank capacities of air compressors in general use and demand.

3.6. *Volumetric efficiency* is the ratio of capacity of the compressor to the piston displacement of the compressor.

3.7. *Free air* is defined as air at atmospheric conditions at any specific location.

3.8. *Nominal receiver-tank capacity* is the content of the tank expressed in United States gallons.

3.9. The *over-all efficiency* of these compressors is the ratio of the capacity of the compressor to the actual electric power input to the motor, and is expressed in terms of cubic feet of air per kilowatt hour input to the motor.

4. REQUIREMENTS

4.1. *Safety.*—All tanks shall be constructed in accordance with the ASME [2] Code for Unfired Pressure Vessels, and shall be equipped with an ASME safety valve and a suitable drain outlet.

4.2. *Electric wiring.*—All electric wiring shall be in accordance with the National Electrical Code for ordinary locations.

4.3. *Capacity and over-all efficiencies* shall be determined by the methods of test outlined in paragraphs 5.1 to 5.9.

4.4. *Standard equipment.*—The standard equipment for tank-mounted air compressors shall be as given in table 1.

TABLE 1. *Standard equipment for tank-mounted air compressors*

Single-stage models	Two-stage models
Compressor.	Compressor.
Motor.	Intercooler.
Pressure gage.	Motor.
Shutoff line valve.	Pressure gage.
ASME safety valve.	Shutoff line valve.
Automatic unloader.	ASME safety valve.
V-belt drive, if belt-driven.	Automatic unloader.
Tank—must conform to ASME Code.	V-belt drive, if belt-driven.
Intake muffler and air filter.	Tank—must conform to ASME Code.
Tank drain cock.	Intake muffler and air filter.
Automatic pressure switch.	Tank drain cock.
	Automatic pressure switch.

4.5. *Size classifications.*—Tank-mounted air compressors shall be classified according to the sizes given in table 2.

TABLE 2. *Size classifications of tank-mounted air compressors*

	Single-stage models							Two-stage models							
Horsepower of compressor units	¼	⅓	½	¾	1	1½	2	1	1½	2	3	5	7½	10	15
Minimum tank capacity in U. S. gallons	20	20	30	30	30	60	60	60	60	60	80	80	80	80	120

4.6. *Production tests on units.*—Each complete tank-mounted assembled unit shall be tested and operated by the manufacturer for a suitable period of time in order to reveal and eliminate oil leaks, air leaks, electrical defects, excessive mechanical noise, vibration, and other defects.

[2] American Society of Mechanical Engineers.

5. METHODS OF TEST

5.1. *Tests for capacity and over-all efficiency.*—These test methods provide for the determination of capacity and over-all efficiency of tank-mounted, electric-driven air compressors.

5.2. A test using a low-pressure nozzle (ASME PTC [3]–9, 1939, as permitted by section 4.10 of ASME PTC–9, 1954), and as outlined in paragraphs 5.3 to 5.8, herein, shall be used to determine capacity, but shall be limited to conditions set forth in paragraphs 5.3 and 5.4. In any competitive test, the several units shall be tested under conditions agreed upon by all interested parties. No provision is made for correcting power input and compressor capacity for variations in barometer readings because correction formulas are not applicable to units in the size range covered by this standard. However, the test conditions are so specified that all rating tests will be made under comparable conditions.

5.3. *Capacity* shall be measured by discharging the output of the compressor to the atmosphere through a low-pressure nozzle in a manner adapted from that described in ASME PTC–9, Displacement Compressors and Blowers, 1939, as permitted by section 4.10 of ASME PTC–9, 1954; or in the chapter on flow measurement in part 5, Instruments and Apparatus, ASME PTC. The nozzle shall be of such a size that the pressure drop through it shall be at least 10 inches of water but less than 40 inches of water.

5.4. *Test conditions.*—Tests shall be conducted in an ambient temperature of 65° to 90° F and with the barometric pressure between 29.0 and 30.0 inches of mercury. The reference temperature at which the delivery is to be expressed shall be the ambient. Under these conditions no corrections will be necessary or permissible in determining over-all efficiency. A maximum deviation of ±5 percent from motor-rated voltage is permissible. During the actual test run, a maximum of ±2 percent fluctuation in voltage is permissible. No test shall be run during periods of sudden and widely changing weather conditions. If the conditions causing the fluctuations in the discharge pressure are within the control of the operator, they must be corrected in order to achieve uniformity of running conditions within the prescribed limits suggested in paragraph 5.6. If the fluctuations are due to external conditions beyond the control of the operator, such as weather or electric current, the test must necessarily be deferred.

5.5. *Apparatus.*

5.5.1. The arrangement of the essential apparatus is shown in figure 1.

5.5.2. The discharge pressure of the compressor shall be measured by means of a 300-lb/in.^{2} Bourdon gage. The scale of this gage shall be such that a pressure difference of 3 lb/in.^{2} may be readily read with an instrument error not exceeding 2 lb/in.^{2}

5.5.3. A water manometer with a bore of at least ¼ inch shall be used for measuring the gaging tank pressure.

5.5.4. Ammeter, voltmeter, and wattmeter shall be accurate to within ±2 percent of full-scale reading. The scales of the meters shall be at least 4 inches long, and electrical indications shall be between one-third and three-fourths of full-scale reading. The electric input to the motor shall be determined by the wattmeter.

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[3] American Society of Mechanical Engineers Power Test Code.

5.5.5. Thermometers for obtaining the ambient and nozzle tank temperatures shall be of the mercury-in-glass type with etched stems. Commercial or industrial metal-encased thermometers are not permitted.

5.5.6. The design and dimensions of the test nozzle are as shown in figure 2 and table 3, but if so elected by the compressor manufacturer, long-radius, low-ratio flow nozzles with applicable tables, curves, and formulas, as described in ASME PTC–9, 1954, may be used, subject to the limiting conditions of this Commercial Standard and section 5.05 of the 1954 ASME Power Test Code.

TABLE 3. *Test nozzle dimensions and approximate air capacities*

[See fig. 2]

D	A	B	C	E	F	G	J	K	R	Minimum capacity free air [1]	Maximum capacity free air [1]
in.	*in.*	*in.*	*in.*	*in.*	*in.*	*in.*	*in.*	*in.*	*in.*	*cu ft/min*	*cu ft/min*
1/8	7/32	1 1/32	2	1 5/8	1/2	1 1/4	2 1/2	2 3/8	3/32	0.988	1.98
3/16	5/16	1 5/16	2	1 5/8	1/2	1 1/4	2 1/2	2 3/8	1/8	2.235	4.45
1/4	1 3/32	2 7/32	2	1 5/8	1/2	1 1/4	2 1/2	2 3/8	5/32	3.95	7.91
3/8	5/8	5/8	2	1 5/8	1/2	1 1/4	2 1/2	2 3/8	1/4	8.89	17.8
1/2	1 3/16	7/16	2	1 5/8	1/2	1 1/4	2 1/2	2 3/8	5/16	15.8	31.6
3/4	1 1/4	0	2	--------	1/2	1 1/4	2 1/2	2 3/8	1/2	35.6	71.2
1	1 5/8	0	2	--------	1/2	1 5/8	2 1/2	2 3/8	5/8	63.2	127

[1] Approximate minimum and maximum air capacities based on nozzle pressures of 10 and 40 in. of water, 30-in. barometer, 150° F nozzle temperature, 70° F intake temperature.

5.5.7. Gaging tank dimensions shall agree with those shown in figure 3.

5.6. *Duration of test.*—The duration of a compressor test will be governed by the time required to record enough observations to demonstrate the uniformity of running conditions, but in no case shall the test be less than 1 hour. During this period the final discharge pressure shall be held constant to within ±2 percent of the desired test pressure.

5.7. *Test data.*—The test data shall include the following:

(a) Duration of test, minutes.
(b) Compressor speed, revolutions per minute.
(c) Discharge pressure—psi gage.
(d) Barometer, inches Hg=P_b.
(e) Nozzle diameter, inches=D.
(f) Nozzle pressure, inches of water=i.
(g) Nozzle temperature—degrees Fahrenheit=t_n. $T_n=460+t_n$.
(h) Ambient temperature—degrees Fahrenheit=t_a. $T_a=460+t_a$.
(i) Power input, kilowatts=kw.

5.8. *Compressor capacity.*—Compressor delivery shall be calculated by the following formula:

$$Q=\frac{2.552D^2CT_a}{0.491P_b}\sqrt{\frac{P_bi}{T_n}}$$

where C is a coefficient of discharge selected from chart, figure 4, and table 4, and Q is the actual delivery in cubic feet per minute expressed at ambient conditions.

TABLE 4. *Nozzle coefficients*

Curve (see fig. 4)	Nozzle diameter, in.						
	⅛	3/16	¼	⅜	½	¾	1
A	0.920	0.934	0.943	0.950	0.956	0.961	0.965
B	.928	.940	.947	.954	.958	.963	.967
C	.933	.944	.950	.957	.960	.965	.969
D	.936	.947	.953	.958	.961	.967	.971
E	.940	.949	.955	.960	.963	.969	.973
F	.943	.951	.956	.961	.965	.970	.974
G	.945	.953	.957	.963	.966	.972	.976
H	.947	.955	.958	.964	.968	.973	.977
I	.949	.956	.959	.965	.969	.974	.979
J	.951	.957	.960	.966	.970	.976	.980
K	.953	.958	.961	.967	.971	.977	.981
L	.955	.960	.963	.969	.973	.978	.982
M	.957	.961	.965	.970	.974	.980	.983
N	.958	.963	.966	.972	.976	.982	.985
O	.959	.964	.968	.973	.977	.983	.986
P	.960	.965	.969	.975	.979	.984	.988
Q	.961	.966	.970	.976	.980	.985	.990
R	.962	.967	.971	.977	.981	.986	.990

5.9. *Over-all efficiency* shall be calculated by the following formula:

$$E=\frac{60Q}{kw},$$

where E is the over-all efficiency expressed in cubic feet per kilowatt hour.

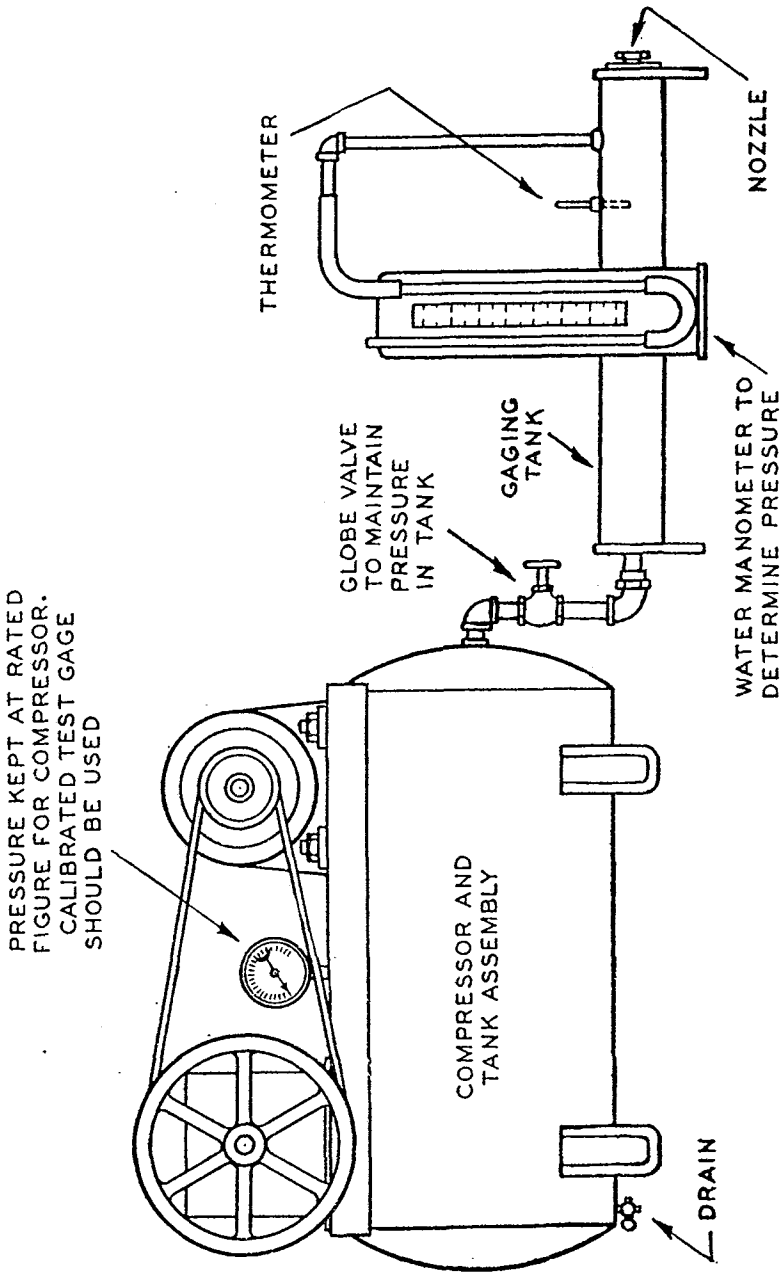
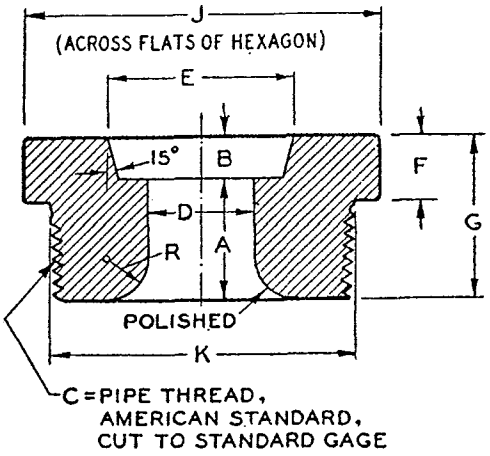
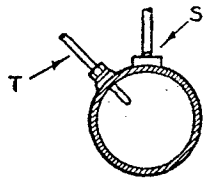


FIGURE 1.—*Arrangement of essential apparatus.*



MATERIAL - TOBIN BRONZE OR STAINLESS STEEL

FIGURE 2.—*Test-nozzle design.*



SECTION B–B

E - LOCATION OF BARE THERMOMETER
S - TAP FOR NOZZLE PRESSURE
T - BARE THERMOMETER FOR MEASURING AIR TEMPERATURE
D - NOZZLE DIAMETER

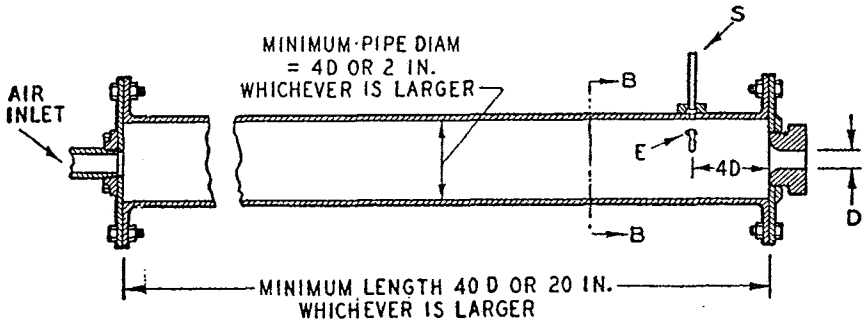


FIGURE 3.—*Dimensions of gaging tank.*

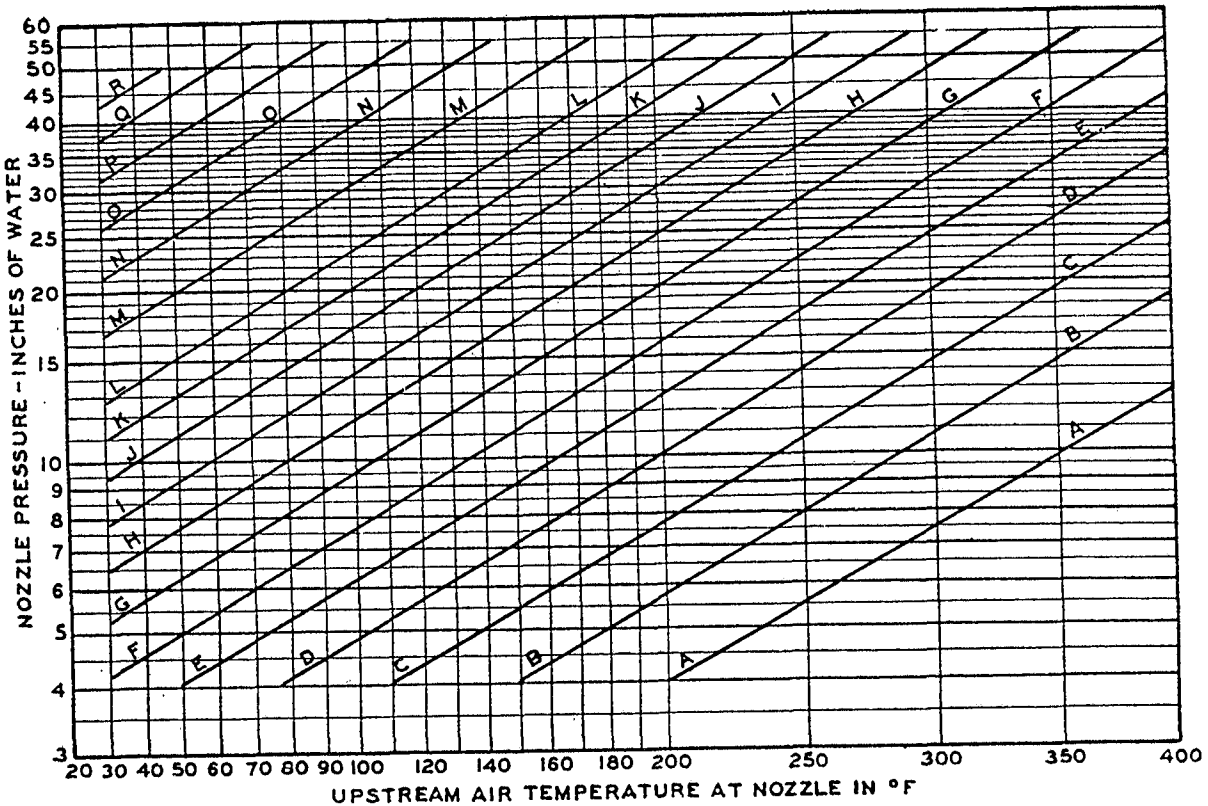


FIGURE 4.—*Isoparameter lines for selection of nozzle coefficient from table 4.*

6. LABELING AND GUARANTY

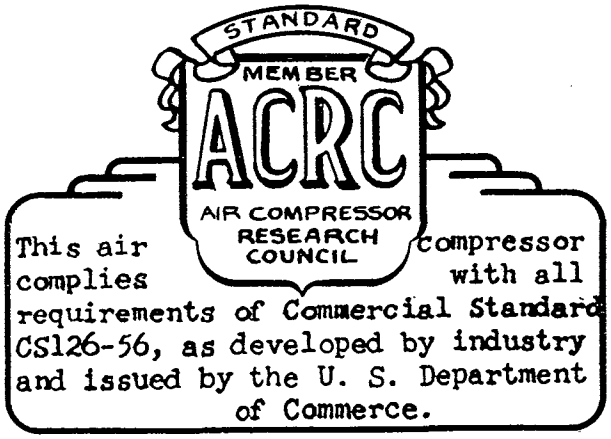
6.1. The name of the manufacturer or distributor, model number, and serial number shall be shown in a conspicuous place on each unit.

6.2. *Guaranty.*—The air compressor shall be guaranteed by the manufacturer against defects in material and workmanship for a period of not less than 90 days from date of installation.

6.3. *Declaration of compliance.*—In order that purchasers of air compressors may be assured that these units comply with the requirements of this standard as a basis for fair competition, it is recommended that the following statement be included in manufacturers' and/or distributors' warranties, labels, invoices, contracts, sales literature, etc.:

> This air compressor complies with all requirements of Commercial Standard CS126–56, as developed by the industry under the procedure of the Commodity Standards Division, and issued by the U. S. Department of Commerce.

6.4. The following illustrates the label adopted by the Air Compressor Research Council for use by its members in declaring compliance with the standard:



7. EFFECTIVE DATE

7.1. Having been passed through the regular procedure of the Commodity Standards Division, and approved by the acceptors hereinafter listed, this Commercial Standard was issued by the United States Department of Commerce, effective from May 1, 1956.

EDWIN W. ELY,
Chief, Commodity Standards Division.

HISTORY OF PROJECT

First edition.—After some exploratory conferences on general objectives, the Pneumatic Automotive Equipment Association, on August 25, 1943, requested the cooperation of the National Bureau of Standards in the establishment of a Commercial Standard for tank-mounted air compressors.

On November 29, 1944, a proposed Commercial Standard was circu-

lated to leading user organizations, Government agencies, distributors, and manufacturers for advance comment. Two conferences were held to review the comments that were received, and to adjust the proposed standard in the light of these comments.

The recommended Commercial Standard, as adjusted, was circulated on March 26, 1945, to the entire trade for written acceptance, since the comments were mostly favorable and did not seem to warrant the holding of a general conference under wartime conditions.

Upon receipt of acceptances in writing estimated to represent a satisfactory majority of the production volume, and in the absence of active, valid opposition, an announcement was issued on June 5, 1945, that the standard would become effective for new production from December 5, 1945.

First revision.—In 1948, work was undertaken by a technical committee of the Pneumatic Automotive Equipment Association with a view toward revising the standard. Several proposed revisions were submitted to the standing committee for approval over a period of time, and each in turn required adjustment. Finally, on March 24, 1954, the recommended revision, as adjusted, was circulated to the entire trade for written acceptance. Several constructive comments were received, and at a meeting of the Air Compressor Research Council (formerly Pneumatic Automotive Equipment Association) on September 9, 1955, all necessary changes were completed.

An announcement was issued on November 1, 1955, that the revision would become effective for new production from May 1, 1956.

Project Manager: Harold A. Bonnet, Commodity Standards Division, Office of Technical Services.

Technical Adviser: Howard S. Bean, Mechanics Division, National Bureau of Standards.

STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comments concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, which acts as secretary for the committee.

J. D. Lodwick, Curtis Pneumatic Machinery Division, Curtis Manufacturing Co., 1905 Kienlen Ave., St. Louis 20, Mo. (chairman).
H. M. Kidd, The DeVilbiss Co., Toledo 1, Ohio.
William H. Wheeler, Vertical Compressor Division, Worthington Corp., 37 Appleton St., Holyoke, Mass.
H. P. Dolan, Air Compressor Research Council, 27 East Monroe St., Chicago 3, Ill.
Herbert L. Rosen, Franklin Supply Co., 184 Broad St., Providence 3, R. I.
George P. Webster, Ballou & Wright, 1507 12th Ave., Seattle 22, Wash.
H. R. Williams, The Amco Corp., 5733 Grand River Ave., Detroit 8, Mich.
H. S. Mount, Sun Oil Co., 1600 Walnut St., Philadelphia 3, Pa.
P. J. Milo, The Texas Co., 135 East 42d St., New York 17, N. Y.
G. T. Ryan, Gulf Oil Corp., Pittsburgh 30, Pa.

ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date_____

Commodity Standards Division,
Office of Technical Services,
U. S. Department of Commerce,
Washington 25, D. C.

Gentlemen:

We believe that this Commercial Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production [1] distribution [1] purchase [1] testing [1]

of tank-mounted air compressors. We reserve the right to depart from it as we deem advisable.

We understand, of course, that only those products which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer_____
(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer_____

Organization_____
(Fill in exactly as it should be listed)

Street address_____

City, zone, and State_____

[1] Underscore the one that applies. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade-associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

Cut on this line)

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial Standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of Commercial Standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

ACCEPTORS

The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, purchase, or testing of tank-mounted air compressors. In accepting this standard they reserved the right to depart from it as they individually deem advisable. It is expected that products which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

ASSOCIATIONS

(General Support)

American Association of Engineers, Chicago, Ill.
American Automobile Association, Washington, D. C.
National Association of Purchasing Agents, Educational Committee, Detroit, Mich.

FIRMS AND OTHER INTERESTS

A. & G. Jobbers, Washington, D. C.
Amco Corp., Detroit, Mich.
American Air Compressor Corp., North Bergen, N. J.
American Brake Shoe Co., Kellogg Division, Rochester, N. Y.
Arbor Auto Service, Philadelphia, Pa.
Auto Electric Shop, Inc., Pontiac, Mich.
Auto Parts Co., Inc., Ann Arbor, Mich.
Auto Parts House, Lafayette, La.
Auto Parts, Inc., Rapid City, S. Dak.
Auto Spring & Supply Co., Wichita Falls, Tex.
Automobile Equipment Co., Detroit, Mich.
Automotive Supply Co., Altoona, Pa.
B. & M. Air Compressor & Motor Repair Co., Inc., Cleveland, Ohio
Baird Bearings & Parts Co., Birmingham, Ala.
Ballou & Wright, Portland, Oreg.
Ballou & Wright, Seattle, Wash.
Bee Inc., Allentown, Pa.
Bergstrom Automotive Parts, Inc., Rockford, Ill.
Bernstein Bros., Inc., Paterson, N. J.
Binks Manufacturing Co., Chicago, Ill.
Brunner Manufacturing Co., Utica, N. Y.
Burdman, J., Auto Parts, Inc., Kirksville, Mo.
Cave Auto Parts Co., Springfield, Ill.
Central of Georgia Railway Co., Savannah, Ga.
Chabots Super Service, Portsmouth, Ohio
Champion Pneumatic Machinery Co., Princeton, Ill.
Chicago Pneumatic Tool Co., New York, N. Y.
Cochin, J. D., Manufacturing Co., South San Francisco, Calif.
Cohen Industrial Supply, Inc., Erie, Pa.
Consolidated Gas Electric Light & Power Company of Baltimore, Baltimore, Md.
Curtis Manufacturing Co., Pneumatic Division, St. Louis, Mo.
Danville Auto Parts Co., Danville, Ill.
Denver Gear & Parts Co., Denver, Colo.
Detroit, City of, Department of Public Works, Detroit, Mich.
Detroit, University of, Detroit, Mich.
DeVilbiss Co., Toledo, Ohio
Erie Meter Systems, Inc., Erie, Pa.
Evansville Auto Parts, Inc., Evansville, Ind.
Ford Motor Co., Dearborn, Mich.
Foster, George A., Inc., Beverly, Mass.
Franklin Supply Co., Providence, R. I.
Fred's Service, Pontiac, Ill.
Gardner-Denver Co., Quincy, Ill.
Genuine Parts Company of West Virginia, Wheeling, W. Va.
Gilbert & Barker Manufacturing Co., West Springfield, Mass.
Globe Hoist Co., Philadelphia, Pa.
Haire Murray Co., Inc., Fresno, Calif.
Hill Piston Service Co., Battle Creek, Mich.
Howard Supply Co., Urbana, Ohio
Ingersoll-Rand Co., New York, N. Y.
Johnson, Andrew, Co., Inc., Chicago, Ill.
Kansas State Highway Commission, Topeka, Kans.
Keystone Compressor Co., Philadelphia, Pa.
Lynch Corp., Compressor Division, Anderson, Ind.
Manning, Wm., T., Co., Inc., Fall River, Mass.
Marr, Charles J., Office of, New Philadelphia, Ohio
Maryland State Roads Commission, Baltimore, Md.
Master Tire Service, Inc., Grand Rapids, Mich.
McGowin Lyons Hardware & Supply Co., Mobile, Ala.
Motive Parts Company of Pennsylvania, Pittsburgh, Pa.
Motor Parts & Equipment, Inc., Tacoma, Wash.
Motor Replacement Service, Inc., Detroit, Mich.
Motor Supply Co., Inc., Monroe, La.
Mountjoy Co., San Antonio, Tex.
Nichols Equipment Co., Little Rock, Ark.
Norwood Distributors, Inc., Long Branch, N. J.
Oregon State College, Corvallis, Oreg.
Oregon State Highway Department, Salem, Oreg.
Patzig Testing Laboratories, Des Moines, Iowa
Paxton & Gallagher Co., Omaha, Nebr.
Pennsylvania, Commonwealth of, Department of Property & Supplies, Harrisburg, Pa.
Quincy Compressor Co., Quincy, Ill.
Reliable Auto Parts Co., New Philadelphia, Ohio
Revolvator Co., North Bergen, N. J.
Rhodes Pump & Equipment Co., Cromwell, Conn.
Rotary Lift Co., Memphis, Tenn.
Russell, J., & Co., Inc., Holyoke, Mass.
Salt Lake Hardware Co., Salt Lake City, Utah
Severin Supply Co., Oklahoma City, Okla.
Sharpe Manufacturing Co., Los Angeles, Calif.
South Carolina, State Highway Department, Columbia, S. C.
Standard Oil Company of California, San Francisco, Calif.
Straus Frank Co., San Antonio, Tex.
Stromes Systems, Inc., New York, N. Y.
Sun Oil Co., Philadelphia, Pa.
Taylor Parts & Supply Co., Inc., Andalusia, Ala.
Tide Water Associated Oil Co., Bayonne, N. J.
Tire Service Co., Spokane, Wash.
Torello, F., & Son Machine Co., West Haven, Conn.
United States Air Compressor Co., Cleveland, Ohio
United States Testing Co., Inc., Hoboken, N. J.
Virginia, Commonwealth of, Department of Highways, Richmond, Va.
Wayne Pump Co., Salisbury, Md.
Wharton & Barnard, Milford, Del.
Wisconsin Auto Supply Co., Wausau, Wis.
Yakie Supply Co., Port Arthur, Tex.

UNITED STATES GOVERNMENT

Department of the Army, Procurement Division, Standards Branch, Washington, D. C.

OTHER COMMERCIAL STANDARDS

A list of all effective Commercial Standards may be obtained from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. These publications may be purchased at the prices indicated on the list, which also includes directions for ordering copies.

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